AMENDMENTS TO THE CLAIMS

1. (Currently amended) A vector for trapping an unknown gene of *Drosophila melanogaster*, which is a recombinant plasmid comprising a recombinant P-element, wherein the P-element comprises the following nucleotide sequences in this order:

an artificial consensus splicing acceptor site;

a synthetic stop/start sequence;

a promoterless reporter gene;

a heatshock promoter directed ~~drug resistance gene~~ neomycin phosphotransferase gene; and

a ~~gene responsible for a detectable phenotype of the *Drosophila melanogaster*~~; a mini-white gene under control of a white gene promoter and comprising a synthetic splicing donor site in place of a poly-A addition site.

2. (Currently amended) The vector of claim 1, wherein the recombinant plasmid is made by inserting the heatshock promoter directed ~~drug resistance gene~~ neomycin phosphotransferase gene into pCasper3.

3. (Currently amended) The vector of claim 1, wherein the promoterless reporter gene is ~~the~~ a Gal4 gene.

4. (Previously presented) A vector for trapping an unknown gene of *Drosophila melanogaster*, which vector has the nucleotide sequence of SEQ ID No. 1.

5. (Currently amended) The vector of claim 1, wherein the promoterless reporter gene is a Gal4 DNA binding domain-P53 fusion gene.

6. (Currently amended) The vector of claim 1, wherein the promoterless reporter gene is ~~the~~ a Gal4-firefly luciferase fusion gene.

7-8. (Cancelled)

9. (Currently amended) A vector made by inserting a heatshock promoter directed Gal4 activator domain-large T antigen fusion gene into the polycloning site of ~~the~~ a pCasperhs.

10. (Currently amended) A method for trapping an unknown gene of *Drosophila melanogaster* by using a vector which is a recombinant plasmid comprising a recombinant P-element, wherein the P-element comprises the following nucleotide sequences in this order:

an artificial consensus splicing acceptor site;

a synthetic stop/start sequence;

a promoterless Gal4 reporter gene;

a heatshock promoter directed ~~drug resistance gene~~ neomycin phosphotransferase gene; and

a ~~gene responsible for a detectable phenotype of the *Drosophila melanogaster*~~; mini-white gene under control of a white gene promoter and comprising a synthetic splicing donor site in place of a poly-A addition site,

which method comprises the steps of:

(a) introducing the vector into the genome of a white minus fly;

(b) selecting primary transformants containing the vector;

(c) crossing the primary transformants with a transposase source fly strain to force the ~~vector~~ P-element to jump into other locations;

(d) selecting secondary transformants by ~~picking up the~~ selecting flies produced from the cross of step (c) having strong eye color,

(e) crossing the secondary transformants with UAS (Upstream Activator Sequence)-luciferase harboring fly strain and measuring ~~the reporter gene of the resultant flies~~ expression of the promoterless Gal4 reporter gene in the secondary transformants; and

(f) identifying the trapped gene by cloning and sequencing ~~the cDNAs fused to the reporter gene and the gene responsible for a detectable phenotype of the fly~~ cDNA comprising the Gal4 gene and cDNA comprising the mini-white gene.

11. (Currently amended) The method according to claim 10, wherein the recombinant plasmid is made by inserting the heatshock promoter directed ~~drug resistance gene~~ neomycin phosphotransferase gene into pCasper3.

12-13. (Cancelled)

14. (Currently amended) The method according to claim 10, wherein ~~the gene responsible for a detectable phenotype of the *Drosophila melanogaster* is mini-white gene, and~~ in the step (f) the cDNAs fused to the ~~reporter~~ Gal4 gene and the mini-white gene are cloned and sequenced.

15. (Currently amended) The method according to claim 10, wherein ~~the drug resistance gene is neomycin-phosphotranspherase gene and the promoter directed drug resistance gene is a heatshock promoter, and~~ in the step (b) the primary transformants resistant to G418 are selected.

16-19. (Cancelled)

20. (New) A method for trapping an unknown gene of *Drosophila melanogaster* by using a vector A and a vector B;

wherein vector A is a recombinant plasmid comprising a recombinant P-element, wherein the P-element comprises the following nucleotide sequences in this order:

an artificial consensus splicing acceptor site;

a synthetic stop/start sequence;

a promoterless Ga14 DNA binding domain-P53 fusion gene as a reporter gene;

a heatshock promoter directed neomycin phosphotransferase gene; and

a mini-white gene under control of a white gene promoter and comprising a synthetic splicing donor site in place of a poly-A addition site, and

vector B is derived from pCasperhs by inserting a heatshock promoter directed to Ga14 activator domain-large T antigen fusion gene within polycloning site of the pCasperhs,

which method comprises the steps of:

(a) introducing each of the vectors A and B into the genomes of separate white minus flies;

(b) selecting primary transformants for the vector A which are resistant to G418 and selecting primary transformants for the vector B which have an eye color other than white;

(c) crossing the primary transformants for the vector A with a transposase source fly strain to force the P-element to jump into other locations;

(d) selecting secondary transformants for the vector A by selecting flies produced by the cross of step (c) that have strong eye color;

(e) crossing the secondary transformants with the primary transformants for the vector B to obtain flies harboring the P-element and vector B;

(f) crossing the flies obtained in the step (e) with an UAS-luciferase harboring fly strain and measuring luciferase expression of the resultant flies after a heatshock treatment; and

(g) identifying the trapped gene by cloning and sequencing cDNA comprising the reporter gene and cDNA comprising the mini-white gene.

21. (New) The method according to claim 20, wherein the vector A is derived from pCasper3.

22. (New) The method according to claim 20, wherein in the step (g) the cDNAs fused to the reporter gene and the mini-white gene are cloned and sequenced.

23. (New) A method for trapping an unknown gene of *Drosophila melanogaster* by using a vector which is a recombinant plasmid comprising a recombinant P-element, wherein the P-element comprises the following nucleotide sequences in this order:

an artificial consensus splicing acceptor site;

a synthetic stop/start sequence;

a promoterless Gal4-firefly luciferase fusion gene as a reporter gene;

a heatshock promoter directed neomycin phosphotransferase gene; and

a mini-white gene under control of a white gene promoter and comprising a synthetic splicing donor site in place of a poly-A addition site,

which method comprises the steps of:

(a) introducing the vector into the genome of a white minus fly;

(b) selecting primary transformants containing the vector;

(c) crossing the primary transformants with a transposase source fly strain to force the P-element to jump into other locations;

(d) selecting secondary transformants by selecting flies produced from the cross of step (c) having strong eye color;

(e) measuring expression of Gal4-firefly luciferase fusion gene in the secondary transformants without crossing the secondary transformants with UAS-luciferase harboring strain; and

(f) identifying the trapped gene by cloning and sequencing cDNA comprising the Gal4 gene and cDNA comprising the mini-white gene.